November 4, 1955.

Dr. John R. Van Wazar
Monsanto Chemical Company
Dayton, Ohio

Dear Dr. Van Wazar:

We are currently engaged in a study of the enzymatic synthesis of polyphosphate and read your publication with considerable interest.

We have purified an enzyme from Escherichia coli that polymerizes the terminal phosphate of ATP to a long chain polyphosphate. This product shows all the characteristics that have been assigned to the high molecular weight phosphate compounds. It gives a metachromatic reaction, is completely precipitated as an albumin complex at pH 4, and is only partially elutable from anion-exchange resins with the strongest eluants available. It appears to contain negligible amounts of carbon and nitrogen residues. In our routine assay we produce 0.4 μmole in one hour using about 2 γ of enzyme protein. It should be no problem for us to expand the scale of this reaction 100-fold or more to accumulate adequate amounts of this product. Our objectives include a more thorough chemical and physical characterization of the product, as well as attempts to gain some insight into the biologic role of this material.

I am writing to you for advice and help regarding the use of physical and other methods to investigate the properties of our product. I would also appreciate it, if you consider the trouble worth taking, of sending me samples of metaphosphate of different average chain lengths, as described by Katchman and yourself. Since our product contains P^{32}, it would be simple for us to mix it with one or more of your fractions and observe the distribution of phosphate and P^{32}, in titration with albumin, and any other systems that you might suggest.

With many thanks for your interest,

Sincerely yours,

AK/McK

Arthur Kornberg.